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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 662194	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP00/06701	International filing date (day/month/year) 28 September 2000 (28.09.00)	Priority date (day/month/year) 02 October 1999 (02.10.99)
International Patent Classification (IPC) or national classification and IPC H04N 5/335, 5/225, 5/232, H01L 27/14		
Applicant ETOH, Takeharu		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>5</u> sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input checked="" type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 23 January 2001 (23.01.01)	Date of completion of this report 14 June 2001 (14.06.2001)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-6,8-11, as originally filed
pages _____, filed with the demand
pages 7, filed with the letter of 08 June 2001 (08.06.2001)
- ☒ the claims:
pages 1-6, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages 1-4,7-10,12, as originally filed
pages _____, filed with the demand
pages 5,6,11, filed with the letter of 08 June 2001 (08.06.2001)
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 7
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

A common technical feature of claims 1-4 (hereinafter called the invention of the first group) is "an imaging device, in which the centers of some of the blocks constituting an imaging face can be adjusted to agree with the optical axis of incident light."

A common technical feature of claims 5 and 6 (hereinafter called the invention of the second group) is "an imaging element, in which a region along at least one of the border lines between the blocks constituting an imaging face is provided with a voltage supply line for controlling the circuits in the respective blocks."

Therefore, it cannot be considered that the inventions of the above respective groups involve one or more of the same or corresponding special technical features as provided in PCT Rule 13.2.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-6	YES
	Claims		NO
Inventive step (IS)	Claims	1-6	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

2. Citations and explanations

Claims 1-3

Document 1: JP, 6-217206, A (Olympus Optical Co., Ltd.), 5 August, 1994 (05.08.94), full text, Figs. 1-7

Document 2: JP, 7-222067, A (Konica Corp.), 18 August, 1995 (18.08.95), full text, Figs. 1-10

are documents showing the general state of art in this technical field. Document 1 describes an imaging element, in which (1) an imaging face is divided into a plurality of blocks and (2) each of the blocks has an image information reading line. Document 2 describes a technique of changing the relative position between an imaging face of an imaging element and the optical axis of incident light. However, none of the documents cited in the ISR describes or suggests the constitution, in which the relative position is changed by 1/2 each of the length and width of each of the blocks constituting the imaging face.

Claim 4

Document 1: JP, 6-217206, A (Olympus Optical Co., Ltd.), 5 August, 1994 (05.08.94), full text, Figs. 1-7

Document 3: JP, 4-68873, A (Kinki University et al.), 4 March, 1992 (04.03.92), page 1, lower left column, lines 5-12

are documents showing the general state of art in this technical field. Document 1 describes an imaging element, in which (1) an imaging face is divided into a plurality of blocks and (2) each of the blocks has an image information reading line. Document 3 describes an imaging device, in which different kinds of imaging elements can be exchanged. However, none of the documents cited in the ISR describes or suggests the constitution, in which (1) plural kinds of packages are available for an imaging element, and (2) the packages include (a) a package allowing a chip to be installed to ensure that the centers of all the blocks constituting an imaging face agree with the optical axis of incident light and (b) a package allowing a chip to be installed to ensure that the centers of some of the blocks constituting an imaging face agree with the optical axis of incident light.

Claims 5 and 6

Document 1: JP, 6-217206, A (Olympus Optical Co., Ltd.), 5 August, 1994 (05.08.94), full text, Figs. 1-7

is a document showing the general state of art in this technical field. Document 1 describes an imaging element, in which (1) an imaging face is divided into a plurality of blocks and (2) each of the blocks has an image information reading line. However, none of the documents cited in the ISR describes or suggests the constitution, in which a region along at least one of the border lines between blocks is provided with a voltage supply line for controlling the circuits in the respective blocks.

capturing area and a package to which the chip is attached, said image capturing area consisting of a plurality of blocks, each of the block having an image information read-out lines; an optical system for focusing incident light from an object to be captured on the image capturing area of the image sensor; an image sensor mount section to which the image sensor is replaceably attached, wherein a plurality of kinds of the packages are provided, and the packages include one to which the chip is attachable so that a center of whole of all the blocks constituting the image capturing area coincides with an optical axis of the incident light, and other one to which the chip is attachable so that a center of at least one of the blocks constituting the image capturing area coincides with the optical axis of the incident light.

[0017] A third aspect of the invention is for achieving the above-mentioned second object, and provides an image sensor comprising a chip, wherein an image capturing area of the chip comprises a plurality of blocks each having image information read-out lines, and voltage supply wires for controlling circuitry in each block is provided in a region along at least one of demarcation lines between the blocks.

[0018] According to the image sensor of the third aspect of the invention, since the voltage supply wire is provided in the region along at least one of the demarcation lines between the blocks, the distance of transmission of the control voltages

CLAIMS .

1. An image capturing apparatus comprising:

an image sensor provided with a chip having an image capturing area and a package to which the chip is attached, said image capturing area consisting of a plurality of blocks, each of the blocks having image information read-out lines;

an optical system for focusing incident light from an object to be captured on the image capturing area of the image sensor; and

a position adjustment mechanism for changing a relative position between the image capturing area of the image sensor and an optical axis of the incident light directed from the optical system to the image capturing area, by 1/2 a longitudinal and lateral length of the blocks.

2. An image capturing apparatus according to claim 1, wherein the position adjustment mechanism is capable of displacing the image sensor with respect to the optical axis.

3. An image capturing apparatus according to claim 1, wherein the position adjustment mechanism is capable of displacing the optical system with respect to the image sensor.

4. An image capturing apparatus comprising:

an image sensor provided with a chip having an image

capturing area and a package to which the chip is attached, said image capturing area consisting of a plurality of blocks, each of the block having an image information read-out lines;

an optical system for focusing incident light from an object to be captured on the image capturing area of the image sensor;

an image sensor mount section to which the image sensor is replaceably attached,

wherein a plurality of kinds of the packages are provided, and the packages include one to which the chip is attachable so that a center of whole of all the blocks constituting the image capturing area coincides with an optical axis of the incident light, and other one to which the chip is attachable so that a center of at least one of the blocks constituting the image capturing area coincides with the optical axis of the incident light.

5. An image sensor comprising a chip, wherein an image capturing area of the chip comprises a plurality of blocks each having image information read-out lines, and voltage supply wires for controlling circuitry in each block is provided in a region along at least one of demarcation lines between the blocks.

6. An image sensor according to claim 5, wherein the chip is cuttable along another one of the demarcation lines between

the blocks.

7. An image capturing apparatus comprising:

an image sensor provided with a chip having an image capturing area and a package to which the chip is attached;

an optical system for focusing incident light from an object to be captured on the image capturing area of the image sensor;
and

a position adjustment mechanism for changing relative positions of the image capturing area of the image sensor and an optical axis of the incident light directed from the optical system to the image capturing area.